What is claimed:

1. A method of determining the osmolarity of a fluid sample, comprising:

generating sample data for the fluid sample;

accounting for transient effects in the sample data;

determining a value associated with a initial point of placement for the sample fluid once the transient effects are accounted for; and

using the determined value to obtain an osmolarity measurement for the fluid sample.

2. The method of claim 1, further comprising determining the initial point of placement after the sample data is generated.

3. The method of claim 1, further comprising accounting for the effects of evaporation before determining the value associated with the initial point of placement.

4. The method of claim 1, wherein using the determined value to obtain an osmolarity measurement comprises subtracting a baseline value from the determined value and using the resulting difference value to determine the osmolarity measurement.

5. The method of claim 4, wherein obtaining the osmolarity measurement comprises using the resulting difference to look up an osmolarity value based on a calibration curve.

6. The method of claim 1, wherein the step of determining the osmolarity measurement is performed using a neural network.

7. The method of claim 1, wherein the step of determining the osmolarity measurement is performed using embedded circuitry.

8. The method of claim 1, wherein determining a value associated with the initial point of placement comprises fitting a curve to a portion of the sample data once the transient effect is accounted for and extrapolating the value using the curve.

9. The method of claim 8, wherein fitting the curve to a portion of the sample data comprises performing a linear regression.

10. The method of claim 1, wherein the transient effect is due to mechanical relaxation of the fluid sample.

11. The method of claim 10, wherein accounting for mechanical relaxation comprises:

determining the number of samples that it takes for the sample data to reach a steady state after the fluid sample is introduced; and

fitting a curve to a portion of the sample data based on the determination of the number of samples that it takes for the sample data to reach a steady state after the fluid sample is introduced.

12. The method of claim 11, wherein determining the number of samples that it takes for the sample data to reach a steady state comprises using a fixed number of samples.

13. The method of claim11, wherein determining the number of samples that it takes for the sample data to reach a steady state comprises determining the point at which the sample data settles into a steady state based on the sample data.

14. The method of claim 13, wherein determining the point at which the sample data settles into a steady state comprises determining the point at which the amplitude of the sample data falls below two percent of the maximum value.

15. The method of claim 13, wherein determining the point at which the signal waveform settles into a steady state is performed using a neural network.

16. The method of claim 2, wherein determining the initial point of placement comprises taking the derivative of the signal waveform and finding the sample at which the derivative is at its maximum.

17. A method of determining the osmolarity of a fluid sample, comprising:

generating sample data for the fluid sample;

accounting for transient effects in the sample data;

accounting for the effects of evaporation before determining the value associated with the initial point of placement.

determining a value associated with a initial point of placement for the sample fluid once the transient and evaporation effects are accounted for; and

using the determined value to obtain an osmolarity measurement for the fluid sample.

18. The method of claim 17, further comprising determining the initial point of placement after the sample data is generated.

19. The method of claim 17, wherein using the determined value to obtain an osmolarity measurement comprises subtracting a baseline value from the determined value and using the resulting difference value to determine the osmolarity measurement.

20. The method of claim 19, wherein obtaining the osmolarity measurement comprises using the resulting difference to look up an osmolarity value based on a calibration curve.

21. The method of claim 17, wherein determining a value associated with the initial point of placement comprises fitting a curve to a portion of the sample data once the transient and evaporation effects are accounted for and extrapolating the value using the curve.

22. The method of claim 21, wherein fitting the curve to a portion of the sample data comprises performing a linear regression.

23. The method of claim 17, wherein the transient effect is due to mechanical relaxation of the fluid sample.

24. The method of claim 23, wherein accounting for mechanical relaxation comprises:

determining the number of samples that it takes for the sample data to reach a steady state after the fluid sample is introduced; and

fitting a curve to a portion of the sample data based on the determination of the number of samples that it takes for the sample data to reach a steady state after the fluid sample is introduced.

25. The method of claim 24, wherein determining the number of samples that it takes for the sample data to reach a steady state comprises using a fixed number of samples.

26. The method of claim 24, wherein determining the number of samples that it takes for the sample data to reach a steady state comprises determining the point at which the sample data settles into a steady state based on the sample data.

27. The method of claim 26, wherein determining the point at which the sample data settles into a steady state comprises determining the

point at which the amplitude of the sample data falls below two percent of the maximum value.

28. The method of claim 17, wherein determining the initial point of placement comprises taking the derivative of the signal waveform and finding the sample at which the derivative is at its maximum.

29. An osmolarity measurement system, comprising:

a measurement device configured to receive a fluid sample and generate sample data for the fluid sample; and

a processing device coupled with the measurement device, the processing device configured to account for transient effects in the sample data, determine a value associated with a initial point of placement for the fluid sample once the transient effects are accounted for, and use the determined value to obtain an osmolarity measurement for the fluid sample.

30. The osmolarity measurement system of claim 29, wherein the measurement device is configured to receive a sample receiving chip, the sample receiving chip comprising a substrate that receives an aliquot volume of a fluid sample and a sample region of the substrate, sized such that the volume of the fluid sample is sufficient to operatively cover a portion of the sample region, whereupon energy properties of the fluid sample can be detected from the sample region to produce the sample data.

31. The osmolarity measurement system of claim 29, wherein the processing device is further configured to determine the initial point of placement based on the sample data after the sample data is generated.

32. The osmolarity measurement system of claim 29, wherein the processing device is further configured to account for the effects of evaporation before determining the value associated with the initial point of placement.

33. The osmolarity measurement system of claim 29, wherein the processor is configured to use the determined value to obtain an osmolarity measurement by subtracting a baseline value from the determined value and using the resulting difference value to determine the osmolarity measurement.

34. The osmolarity measurement system of claim 33, wherein obtaining the osmolarity measurement comprises using the resulting difference to look up an osmolarity value based on a calibration curve.

35. The osmolarity measurement system of claim 33, further comprising a memory coupled with the processing device, the memory configured to store the calibration curve values.

36. The osmolarity measurement system of claim 29, wherein the processing device comprises a neural network.

37. The osmolarity measurement system of claim 29, wherein the processing device is configured to determine a value associated with the initial point of placement by fitting a curve to a portion of the sample data once the transient effect is accounted for and extrapolating the value using the curve.

38. The osmolarity measurement system of claim 37, wherein fitting the curve to a portion of the sample data comprises performing a linear regression.

39. The osmolarity measurement system of claim 29, wherein the transient effect is due to mechanical relaxation of the fluid sample, and wherein the processing device is configured to account for mechanical relaxation by determining the number of samples that it takes for the sample data to reach a steady state after the fluid sample is introduced and fitting a curve to a portion of the sample data based on the determination of the number of samples that it takes for the sample data to reach a steady state after the fluid sample is introduced.

40. The osmolarity measurement system of claim 39, wherein determining the number of samples that it takes for the sample data to reach a steady state comprises using a fixed number of samples.

41. The osmolarity measurement system of claim 39, wherein determining the number of samples that it takes for the sample data to

reach a steady state comprises determining the point at which the sample data settles into a steady state based on the sample data.

42. The osmolarity measurement system of claim 41, wherein determining the point at which the sample data settles into a steady state comprises determining the point at which the amplitude of the sample data falls below two percent of the maximum value.

43. The osmolarity measurement system of claim 29, wherein the processing device is configured to determine the initial point of placement by taking the derivative of the signal waveform and finding the sample at which the derivative is at its maximum.